Naval Mechanical Engineer

Defenition :
Naval Mechanical Engineer

The Mechanical Naval engineer is a professional who studies and

projects the mechanical systems of units, participates in the planning

and direction of design, construction, installation, maintenance,

repair and operation.

Occupational outline

- ***Maintenance***
- ***Supervising machinery operations***
- ***Control of repairs***
- ***Naval design***
- ***Planning***
- ***Assemblies***
- ***General services***
- ***Command***

Naval Mechanical Engineering Plan

2005

1.Academic Program

2.Courses in other disciplines

3.Course contents

Course Matrix for Naval Mechanical Engineering

SEMESTER I			SEMESTER II			SEMESTER III		
GENERAL NAVAL SCIENCE	40	2	INFORMATION	48	2	APPLIED CHEMISTRY	48	2
NAVAL ORIENTATION	32	1	OCEAN AND RIVER NAVIGATION	40	2	DESCRIPTION AND DRAWING	64	2
WEAPONS	40	2	DIFFERENTIAL CALCULUS	80	4	INTEGRAL CALCULUS	72	4
METHODICAL STUDY	40	2	CONSTITUTIONAL RIGHTS	48	2	DISCIPLINARY AND ADMINISTRATIVE PROCEDURES	24	1
COMMUNICATIONS	32	1	RIVER OPERATIONS	32	1	PHYSICS LAB I	32	1
COASTAL NAVIGATION	48	2	STATISTICS	48	2	MECHANICAL PHYSICS	64	3
LEADERSHIP	40	2	CONTABILIDAD I	48	2	COMPUTATIONAL TOOLS	32	1
TECHNIQUES OF EXPRESSION	40	2	GENERAL ADMINISTRATION	48	2	STATICS	64	4
ARMED CONFLICTS	48	2	MILITARY PENAL RIGHTS	32	1	ENGLISH	64	2
NAVAL HISTORY I	48	2	ENGLISH	32	1			
ETHICS	16	1						
TACTICS	40	2						
TOTAL	464	21	TOTAL	456	19	TOTAL	464	20

Plan of study for mechanical engineer

SEMESTRE IV			SEMESTRE V		
Metallurgy	48	2	Thermodynamics	72	4
Multivariable calculus.	72	4	Electrical physics	48	2
Stability	40	2	LAB. Electrical physics.	32	1
Linear Algebra	48	3	Differential equations	72	4
LAB. Physics II	32	1	Electrical applications.	48	2
Physics of heat and waves	64	4	Fluid mechanics	56	3
dynamics	48	3	motors	64	3
Fabrication processes	48	2			
English by level	64	2	English by level	64	2
TOTAL	464	23	TOTAL	456	21

Course Matrix for Naval Mechanical Engineering

SEMESTER VI			SEMESTER VII			SEMESTER VIII		
OPERATION AND MAINTAINENCE OF MACHINERY	48	2	SOLID MECHANICS I	64	3	EPISTEMOLOGIA E INV. CIENT.	48	2
NAVAL AUXILIARY MACHINERY	48	2	MATERIAL INSPECTIONS ESSAY LAB	32	1	SHIP STRUCTURE	64	3
ASTRONOMICAL NAVIGATION	48	2	ELECTRICAL MACHINERY	48	2	ELECTIVE I	48	2
MANIOBRAS	40	2	ELECTRICAL MACHINERY LAB	16	1	MECHANICAL DESIGN I	64	3
MILITARY INTELLIGENCE I	32	1	NAVAL ARCHITECHTURE	64	3	AUTOMATIC CONTROL	64	3
COUNTERINTELLIGENCE	32	1	SOLID MECHANICS II	64	3	ELECTIVE II	48	2
GENERAL METEOROLOGY	40	2	RESISTANCE TO ADNVANCE AND PROP.	64	3	MECHANICAL DESIGN II	64	3
FISICAL REGIME AND INTERNAL CONTROL	48	2	ELECTRONIC INSTALLATIONS	48	2	REFRIDGERATION AND A/A	64	3
GENERAL LOGISTICS	48	2	HEAT TRANSFER	64	3			
OPERATIONAL LEADERSIP	32	1						
PROFESSIONAL AND MILITARY ETHICS	32	1						
PRACTICAL DAMAGE CONTROL	48	2						
TOTAL	496	20	TOTAL	464	21	TOTAL	464	21

COURSES IN OTHER DISCIPLINES

COURSES	HOURS	CRED
FLUID MECHANICS	48	3
DAMAGE CONTROL	40	2

Course contents

Fluid mechanics

General Objectives: Learn the laws of fluid behavior in equilibrium (hydrostatic) and in movement (dynamic) for the applications of a mechanical engineer.

Subjects covered

- ***Introduction, properties of fluid.***
- ***Statics of fluid***
- ***Concepts and fundamental equations of hydrostatics.***
- ***Effects of viscosity***
- ***Structural deformity and hydraulic machinery (cavitation, golpe de ariete)***

Course Contents

Damage Control

General Objectives: To give midshipmen the necessary knowledge to perform damage control aboard the ships and boats of the National Navy. To prepare our future Officers to be leaders and damage control unit leaders.

LEARNING OBJECTIVES

- ***Basic DC***
- ***Compartmentalization***
- ***Reservoirs and watertightness***
- ***Interior Communications***
- ***DC repair group organization***
- ***Types of damage control systems***
- ***Fire classification and combating***
- ***Description, maintenance, knowledge, uses, and precautions for fire control***
- ***Damage resistance***
- ***First Aid***